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Books -- Review: Can-Do Spirit in the Desert --- Recalling the Hoover Dam's construction -- and an era of daring American achievement

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Colossus

By Michael Hiltzik

Free Press, 496 pages, $30

With a runaway oil well fouling the Gulf of Mexico for weeks on end -- and both government and industry seemingly helpless to stop it -- Michael Hiltzik's "Colossus," about the construction of the Hoover Dam, is a welcome reminder of the engineering genius that built America.

Mr. Hiltzik, a Pulitzer Prize-winning journalist and author, tells the Hoover Dam story in the grand tradition of David McCullough, who more or less invented the idea of popular and historically sophisticated books about stupendous engineering achievements. Like Mr. McCullough in "The Great Bridge" (1972), about the Brooklyn Bridge, and "The Path Between the Seas" (1977), about the Panama Canal, Mr. Hiltzik clearly explains the technological and physical difficulties posed by the dam project, but he also fixes the endeavor in its time and captures the personalities of the people involved.

The decades after the Civil War were an age of such projects, which enhanced the growing national feeling that the U.S. was capable of whatever it chose to take on. The Brooklyn Bridge was an astonishing leap in spanning great distances. The Panama Canal -- a project that had defeated the French -- was completed by the U.S. in 10 years. Skyscrapers reached ever higher, culminating in 1931 with the Empire State Building, which would remain the world's tallest building for 40 years.

One of the largest of these megaprojects was the Hoover Dam, its major construction completed during the period 1931-35. At 726 feet, the dam was more than twice as high as any dam ever built and was located in what was then a remote and forbidding desert. But what made the dam so colossal -- far more than its size and location -- was the fact that it had to tame the most unruly major river in North America.

The Colorado rises in the Rocky Mountains and empties (or at least used to -- its water is now almost entirely diverted) into the Gulf of California, 1,450 miles downstream. It drains, with its tributaries, more than a quarter of a million square miles. But unlike most of the other major American rivers, it does not flow through well-watered country, an attribute with profound consequences for the political history of the watershed.

Because the precipitation that feeds the river is erratic, so is its flow. In droughts the flow can be a lazy 4,000 cubic feet a second; in flood, as much as 990,000 cubic feet. And because the river drains the Colorado Plateau, largely made of soft, easily eroded sandstone, the Colorado's sediment load is much more than that of any other large river in the U.S., up to one pound for every 30 gallons. It was this huge sediment load that allowed the Colorado to carve such wonders as the Grand Canyon in a relatively short period of geologic time.

Bringing the Colorado to heel and distributing its precious water to the burgeoning cities and agricultural areas of the parched Southwest has dominated the politics of the region from the late 19th century to the present. Early attempts to commandeer the Colorado were handled by private enterprise and often ended in disaster. In 1905, for instance, the flooding river broke through an irrigation canal intended to supply the Imperial Valley in California. Until the river was wrestled under control two years later, the Colorado poured into what became known as the Salton Sea, a lake that is still the largest body of water in California.

After that disaster it was clear that only a massive government project could tame the Colorado. But it would take two decades of politics before agreement could be reached among the seven states in the watershed -- each fearful that another state might get more than its share of water -- and before Congress could be persuaded to fund the building of the immense dam. Mr. Hiltzik does a terrific job of explaining these political machinations, which reached from local water commissioners to Herbert Hoover's White House.

Although President Hoover -- himself an engineer -- played a significant role in bringing the various parties together, it was his secretary of the Interior who decided to name the dam after the president. Democrats, once in power in the 1930s, changed the name to Boulder Dam, and it wasn't until the 1940s that the name was changed back to honor the 31st president.

I think Mr. Hiltzik buys in too much to the idea that Hoover was a do-nothing president as the catastrophe of the Depression overwhelmed the country. That was the received wisdom in the heyday of liberalism, but recent scholarship has done much to correct it. The author is at his best in a masterly portrayal of Frank Crowe, the central figure in the dam's construction.

A born engineer who demanded much from his workmen, Crowe had to solve a myriad of problems on the fly as he confronted the unexpected difficulties of an unprecedented project in an unprecedented location. He became a celebrity -- hard to imagine in these Kardashian days -- as newsreels recounted the construction's progress. Buick even hired Crowe to endorse its cars. Mr. Hiltzik's engrossing narrative will help to make sure that he is not forgotten.

One of the nice things about nonfiction such as "Colossus" is that the stories don't need to be believable; they just need to be true. Consider: The last man to perish in the dam's construction died 13 years to the day after the first man -- and he was the son of that first man.

The deaths involved in the Hoover Dam construction were appalling by modern standards. Men fell into the gorge, were blown to smithereens by premature detonations, died of heat stroke, were crushed by landslides and hit by boulders. In all, more than 100 perished, beginning with that ill-fated son's father, who drowned while surveying the site in the 1920s.

Despite folk tales to the contrary, none of those unfortunate workers lies buried in the concrete. One man, Ike Johnson, was hit by a bucket used to pour 16-ton loads of concrete. The steel cable carrying the bucket had snapped.

"Search parties could find no trace of Johnson until someone spotted a light flickering in the gloom from midway up the dam face. There they discovered him on a scaffold, flat on his back and encrusted in already setting concrete nearly head to toe, his one free arm holding aloft a lighted match." He was battered, and his eyes smarted from the lime in the cement, but Johnson was otherwise unhurt.

What began as a gargantuan engineering project quickly became a national monument to the American can-do spirit -- nearly a million tourists visit the dam annually even now, though the Hoover has been surpassed in size by other dams around the world. The five-year project, completed two years ahead of schedule and only $5.8 million above its $54.7 million budget, involved 21,000 laborers and required 3.25 million cubic yards of concrete. (The construction process was speeded up by sinking more than 580 miles of one-inch steel pipe in the concrete and circulating cold, refrigerated water to dissipate the chemical heat of setting concrete.) The dam's 17 main turbines generate about four billion kilowatt hours of hydroelectric power, enough to serve the needs of 1.3 million people in Nevada, Arizona and California.

With the U.S. lately facing ever more difficult challenges and the can-do spirit apparently on hold, "Colossus" may inspire in readers a longing for a new building project on the Hoover's scale, something that will summon up once again America's famous self-confidence and daring.

Mr. Gordon is the author, most recently, of a revised edition of his history of the national debt, "Hamilton's Blessing," published by Walker &Co.

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